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DATE: Tuesday, September 14, 2004

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☐	L2	pneumoniae and acyl carrier protein synthase	36
☐	L1	pneumoniae and acy carrier protein synthase	0

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☐ 1. Document ID: US 20040161813 A1

Using default format because multiple data bases are involved.

L3: Entry 1 of 13 File: PGPB Aug 19, 2004

PGPUB-DOCUMENT-NUMBER: 20040161813
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040161813 A1

TITLE: Structure of beta-ketoacyl-[acyl carrier protein] synthases complexed with inhibitors and methods of use thereof

PUBLICATION-DATE: August 19, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Rock, Charles O.	Bartlett	TN	US	
Price, Allen	Memphis	TN	US	
White, Stephen	Memphis	TN	US	

US-CL-CURRENT: 435/15; 435/193, 700/90, 702/27

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWMC | Draw De

☐ 2. Document ID: US 20040029129 A1

L3: Entry 2 of 13 File: PGPB Feb 12, 2004

PGPUB-DOCUMENT-NUMBER: 20040029129
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040029129 A1

TITLE: Identification of essential genes in microorganisms

PUBLICATION-DATE: February 12, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Wang, Liangsu	San Diego	CA	US	
Zamudio, Carlos	La Jolla	CA	US	
Malone, Cheryl	Santee	CA	US	
Haselbeck, Robert	San Diego	CA	US	

Ohlsen, kari L.	San Diego	CA	US
Zyskind, Judith W.	La Jolla	CA	US
Wall, Daniel	San Diego	CA	US
Trawick, John D.	La Mesa	CA	US
Carr, Grant J.	Escondido	CA	US
Yamamoto, Robert	San Diego	CA	US
Forsyth, R. Allyn	San Diego	CA	US
Xu, H. Howard	San Diego	CA	US

US-CL-CURRENT: 435/6; 435/183, 435/252.33, 435/254.2, 435/320.1, 435/325, 435/419, 435/69.1, 530/350, 536/23.2

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw D

☐ 3. Document ID: US 20040006218 A1

L3: Entry 3 of 13 File: PGPB Jan 8, 2004

PGPUB-DOCUMENT-NUMBER: 20040006218
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040006218 A1

TITLE: Chlamydia pneumoniae polynucleotides and uses thereof

PUBLICATION-DATE: January 8, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Griffais, Remy	Montrouge	NY	FR	
Hoiseth, Susan K.	Fairport	NY	US	
Zagursky, Robert John	Victor	NY	US	
Metcalf, Benjamin J.	Rochester	NY	US	
Peek, Joel A.	Pittsford	NY	US	
Sankaran, Banumathi	Penfield	NY	US	
Fletcher, Leah Diane	Geneseo		US	

US-CL-CURRENT: 536/23.1

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw D

☐ 4. Document ID: US 20040005672 A1

L3: Entry 4 of 13 File: PGPB Jan 8, 2004

PGPUB-DOCUMENT-NUMBER: 20040005672
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040005672 A1

TITLE: Heterologous production of polyketides

PUBLICATION-DATE: January 8, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Santi, Daniel V.	San Francisco	CA	US	
Khosla, Chaitan	Stanfrod	CA	US	

US-CL-CURRENT: 435/76; 435/193, 435/254.2, 435/320.1, 435/483, 435/69.1

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De

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☐ 5. Document ID: US 20030068802 A1

L3: Entry 5 of 13 File: PGPB Apr 10, 2003

PGPUB-DOCUMENT-NUMBER: 20030068802
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030068802 A1

TITLE: Use of streptococcus pneumoniae acyl carrier protein synthase crystal structure in diagnostics, antimicrobial drug design, and biosensors

PUBLICATION-DATE: April 10, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Chirgadze, Nicholas Yuri	Indianapolis	IN	US	
Briggs, Stephen Lyle	Indianapolis	IN	US	
Zhao, Genshi	Indianapolis	IN	US	
McAllister, Kelly Ann	Indianapolis	IN	US	

US-CL-CURRENT: 435/193; 702/19

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De

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☐ 6. Document ID: US 20020142401 A1

L3: Entry 6 of 13 File: PGPB Oct 3, 2002

PGPUB-DOCUMENT-NUMBER: 20020142401
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020142401 A1

TITLE: Isolated gene for methylmalonyl CoA epimerase and uses thereof

PUBLICATION-DATE: October 3, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Santi, Daniel	San Francisco	CA	US	

Dayem, Linda	Belmont	CA	US
Kealey, James	San Rafael	CA	US

US-CL-CURRENT: 435/76; 435/252.3, 435/320.1

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWMC | Draw D

☐ 7. Document ID: US 6656703 B1

L3: Entry 7 of 13 File: USPT Dec 2, 2003

US-PAT-NO: 6656703
DOCUMENT-IDENTIFIER: US 6656703 B1

TITLE: High throughput screen for inhibitors of fatty acid biosynthesis in bacteria

DATE-ISSUED: December 2, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Murphy; Christopher	Upton	MA		
Youngman; Philip	Boston	MA		

US-CL-CURRENT: 435/32; 435/183, 435/243, 435/6, 435/7.2, 435/7.32, 530/350, 536/24.1, 536/24.32

ABSTRACT:

Methods for identifying compounds that are inhibitors of bacterial fatty acid biosynthesis are disclosed. Such compounds can be used as lead compounds in methods for preparing antibacterial agents for treating bacterial infections (e.g., in humans, animals, and plants). Inhibitors of bacterial fatty acid synthesis can also be tested for their ability to inhibit synthesis of acylated homoserine lactones. Compounds that inhibit synthesis of acylated homoserine lactones can be used as inhibitors of bacterial virulence. The disclosed methods allow for high throughput screening of libraries of test compounds.

13 Claims, 8 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 6

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWMC | Draw D

☐ 8. Document ID: US 6583275 B1

L3: Entry 8 of 13 File: USPT Jun 24, 2003

US-PAT-NO: 6583275
DOCUMENT-IDENTIFIER: US 6583275 B1

TITLE: Nucleic acid sequences and expression system relating to Enterococcus

faecium for diagnostics and therapeutics

DATE-ISSUED: June 24, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Doucette-Stamm; Lynn A.	Framingham	MA		
Bush; David	Somerville	MA		

US-CL-CURRENT: 536/23.1; 435/243, 435/320.1, 435/325, 435/6, 536/24.3, 536/24.32

ABSTRACT:

The invention provides isolated polypeptide and nucleic acid sequences derived Enterococcus faecium that are useful in diagnosis and therapy of pathological conditions; antibodies against the polypeptides; and methods for the production of the polypeptides. The invention also provides methods for the detection, prevention and treatment of pathological conditions resulting from bacterial infection.

34 Claims, 0 Drawing figures
Exemplary Claim Number: 1

☐ 9. Document ID: US 6515119 B1

L3: Entry 9 of 13 File: USPT Feb 4, 2003

US-PAT-NO: 6515119
DOCUMENT-IDENTIFIER: US 6515119 B1

TITLE: Use of S-ydcB and B-ydcB, essential bacterial genes

DATE-ISSUED: February 4, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Fritz; Christian	Natick	MA		
Youngman; Philip	Boston	MA		
Guzman; Luz-Maria	Boston	MA		

US-CL-CURRENT: 536/23.7; 435/252.3, 435/254.2, 435/320.1, 536/23.1

ABSTRACT:

Disclosed are methods for using the essential genes and polypeptides "S-ydcB," found in Streptococcus pneumoniae, and "B-ydcB," found in Bacillus subtilis. These genes and polypeptides, as well as homologs and orthologs thereof, can be used to identify antibacterial agents for treating a broad spectrum of bacterial infections.

19 Claims, 4 Drawing figures

Exemplary Claim Number: 1
Number of Drawing Sheets: 4

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw. De

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☐ 10. Document ID: US 6503729 B1

L3: Entry 10 of 13 File: USPT Jan 7, 2003

US-PAT-NO: 6503729
DOCUMENT-IDENTIFIER: US 6503729 B1

TITLE: Selected polynucleotide and polypeptide sequences of the methanogenic archaeon, methanococcus jannashii

DATE-ISSUED: January 7, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Bult; Carol J.	Bar Harbor	ME		
White; Owen R.	Gaithersburg	MD		
Smith; Hamilton O.	Baltimore	MD		
Woese; Carl R.	Urbana	IL		
Venter; J. Craig	Rockville	MD		

US-CL-CURRENT: 435/69.1; 435/252.3, 435/320.1, 435/325, 536/23.1, 536/23.5

ABSTRACT:

The present application describes selected polynucleotide sequence from the 1.66-megabase pair genome sequence of an autotrophic archaeon, Methanococcus jannaschii, and its 58- and 16-kilobase pair extrachromosomal elements.

107 Claims, 2 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 2

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw. De

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☐ 11. Document ID: WO 2003102190 A2

L3: Entry 11 of 13 File: DWPI Dec 11, 2003

DERWENT-ACC-NO: 2004-071165
DERWENT-WEEK: 200407

TITLE: Compositions comprising recombinant polypeptide targets for pathogenic bacteria, useful for designing modulators for preventing or treating a disease or disorder associated with the species of origin for the polypeptide

INVENTOR: ARROWSMITH, C; AWREY, D ; BEATTIE, B ; BUZADZIJA, K ; DHARAMSI, A ; DOMAGALA, M ; EDWARDS, A ; HOUSTON, S ; KANAGARAJAH, D ; MANSOURY, K ; MCDONALD, M ; NETHERY, K ; NG, I ; OUYANG, H ; RICHARDS, D ; VALLEE, F ; VEDADI, M ; VIRAG, C

PRIORITY-DATA: 2002US-400463P (August 1, 2002), 2002US-384634P (May 31, 2002), 2002US-385157P (May 31, 2002), 2002US-385542P (June 4, 2002), 2002US-385611P (June 4, 2002), 2002US-385747P (June 4, 2002), 2002US-385750P (June 4, 2002), 2002US-385752P (June 4, 2002), 2002US-385773P (June 4, 2002), 2002US-385780P (June 4, 2002), 2002US-385785P (June 4, 2002), 2002US-385797P (June 4, 2002), 2002US-385962P (June 5, 2002), 2002US-386022P (June 5, 2002), 2002US-386024P (June 5, 2002), 2002US-386087P (June 5, 2002), 2002US-386141P (June 5, 2002), 2002US-386350P (June 5, 2002), 2002US-386586P (June 5, 2002), 2002US-386368P (June 6, 2002), 2002US-386369P (June 6, 2002), 2002US-386436P (June 6, 2002), 2002US-386441P (June 6, 2002), 2002US-386528P (June 6, 2002), 2002US-386573P (June 6, 2002), 2002US-386834P (June 6, 2002), 2002US-399839P (July 31, 2002), 2002US-399861P (July 31, 2002), 2002US-399969P (July 31, 2002), 2002US-399970P (July 31, 2002), 2002US-399983P (July 31, 2002), 2002US-399984P (July 31, 2002), 2002US-399985P (July 31, 2002), 2002US-400154P (August 1, 2002), 2002US-400230P (August 1, 2002), 2002US-400268P (August 1, 2002), 2002US-400363P (August 1, 2002), 2002US-400365P (August 1, 2002), 2002US-400374P (August 1, 2002), 2002US-400380P (August 1, 2002), 2002US-400433P (August 1, 2002), 2002US-400434P (August 1, 2002), 2002US-400436P (August 1, 2002), 2002US-400442P (August 1, 2002)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
WO 2003102190 A2	December 11, 2003	E	606	C12N015/31

INT-CL (IPC): C07 K 14/195; C12 N 15/31; C12 N 15/62; G01 N 33/50

ABSTRACTED-PUB-NO: WO2003102190A
BASIC-ABSTRACT:

NOVELTY - Compositions (I) comprising isolated, recombinant polypeptides, are new.

DETAILED DESCRIPTION - Compositions (I) comprising isolated, recombinant polypeptides comprises:

(A) any one of 88 amino acids sequences, e.g. 465, 312, 661, 234, 72, 195, 463, 465, 587 or 888 amino acids, fully defined in the specification;

(B) an amino acid sequence having at least about 95% identity with the amino acid sequence of (A); or

(C) an amino acid sequence encoded by a polynucleotide that hybridizes under stringent conditions to the complementary strand of a polynucleotide having any one of 88 nucleotide sequences, e.g. 1549, 1930, 902, 705, 219, 1764, 2651, 588, 1392 or 1398 bp, fully defined in the specification.

C comprises at least one biological activity of lysyl-tRNA synthetase from Staphylococcus aureus, valine tRNA synthetase from Streptococcus pneumoniae, aspartate tRNA synthetase from S. pneumoniae, cysteine tRNA synthetase from Helicobacter pylori, malonyl-CoA-(acyl-carrier-protein) transacylase from Pseudomonas aeruginosa, glutamate tRNA synthetase, catalytic subunit from H. pylori, protein chain initiation factor IF-1 from P. aeruginosa, translation initiation factor IF-3 from S. pneumoniae, threonine tRNA synthetase from S. pneumoniae, conserved hypothetical protein from H. pylori, cysteine tRNA synthetase from Escherichia coli, DNA polymerase III, beta-subunit from H. pylori, 3-oxoacyl-(acyl-carrier-protein) synthase II from S. pneumoniae, methionine aminopeptidase

from H. pylori, pyruvate kinase from S. pneumoniae, threonine tRNA synthetase from H. pylori, putative ATP-binding component of a transport system from P. aeruginosa, glucose-6-phosphate dehydrogenase from S. pneumoniae, alanyl-tRNA synthetase from S. pneumoniae, glutamate tRNA synthetase, catalytic subunit from S. pneumoniae, isoleucine tRNA synthetase from S. pneumoniae, RNA polymerase beta-prime chain from S. pneumoniae, RNA polymerase sigma-70 factor from S. pneumoniae, transketolase 1 isozyme from S. pneumoniae, tryptophan tRNA synthetase from P. aeruginosa, holo-(acyl-carrier-protein) synthase from Enterococcus faecalis, glutamate racemase from E. faecalis, glutamate racemase from S. pneumoniae, aspartate tRNA synthetaseC from S. pneumoniae, gamma-glutamyl phosphate reductase from E. faecalis, triosephosphate isomerase from E. faecalis, triosephosphate isomerase from S. pneumoniae, branched-chain alpha-keto acid dehydrogenase from P. aeruginosa, tetrahydrodipicolinate (THDP) N-succinyltransferase from E. faecalis, elongation factor P (EF-P) from P. aeruginosa, fructose-bisphosphate aldolase from E. faecalis, isopentenyl diphosphate isomerase from E. faecalis, glutamate dehydrogenase from E. faecalis, GroEL protein from S. pneumoniae, ATP-binding component of molybdate transport system from S. aureus, DNA topoisomerase IV subunit A from P. aeruginosa, GTP cyclohydrolase II from S. pneumoniae, putative aspartate-semialdehyde dehydrogenase from E. faecalis, or EF-P from H. pylori. The polypeptide of (A), (B) or (C) is at least about 90% pure in a sample of the composition.

INDEPENDENT CLAIMS are included for the following:

(1) a crystallized complex comprising the crystallized, recombinant polypeptide of (I), and a co-factor or a small organic molecule, where the complex is in crystal form;

(2) a method for designing a modulator for the prevention or treatment of a disease or disorder associated with the species of origin for the polypeptide of (I);

(3) a method for identifying small molecules that bind to an isotopically labeled polypeptide of (I); and

(4) a host cell comprising a nucleic acid encoding the polypeptide (I), where a culture of the host cell produces at least about 1 mg of the polypeptide per liter of culture and the polypeptide is at least about one-third soluble as measured by gel electrophoresis.

ACTIVITY - Antibacterial; Antiinflammatory; Gastrointestinal-Gen.; Antiulcer; Antidiarrheic; Ophthalmological. No biological data given.

MECHANISM OF ACTION - Enzyme Inhibitor; Antisense Therapy; Vaccine.
No biological data given.

USE - The compositions and polypeptides are useful as microbial targets for designing modulators for the prevention or treatment of a disease or disorder associated with the species of origin for the polypeptide, e.g. furuncle, pneumonia, gastritis, peptic ulcer disease, diarrhea, meningitis, bacteremia, conjunctivitis or toxic shock syndrome. The polypeptides are also useful for diagnosing a patient suffering from a disease or disorder of a pathogenic species, or for monitoring the effectiveness of an anti-pathogenic treatment.

☐ 12. Document ID: US 20030068802 A1

L3: Entry 12 of 13 File: DWPI Apr 10, 2003

DERWENT-ACC-NO: 2003-657574
DERWENT-WEEK: 200362

TITLE: Composition comprising a crystal of isolated Streptococcus pneumoniae acyl carrier protein synthase, for determining the 3-dimensional structure of the enzyme for developing antibacterial enzyme inhibitors

INVENTOR: BRIGGS, S L; CHIRGADZE, N Y ; MCALLISTER, K A ; ZHAO, G

PRIORITY-DATA: 2000US-215577P (June 30, 2000), 2001US-0897645 (June 29, 2001)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
US 20030068802 A1	April 10, 2003		158	C12N009/10

INT-CL (IPC): C12 N 9/10; G01 N 33/48; G01 N 33/50; G06 F 19/00

ABSTRACTED-PUB-NO: US20030068802A
BASIC-ABSTRACT:

NOVELTY - A composition (C), comprising a crystal of isolated Streptococcus pneumoniae acyl carrier protein synthase (AcpS) (I), is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:

(1) an enzyme active site crystal structure (II) comprising 3',5'- adenosine diphosphate (ADP) binding site, as shown in the specification;

(2) isolating (M1) AcpS (I);

(3) isolated (I) produced by M1;

(4) producing (M2) a crystal of S. pneumoniae acyl carrier protein synthase that diffracts X-rays;

(5) a crystal of (I) produced by M2; and

(6) a co-crystal of (I) with a compound.

USE - The crystal of (I) is useful for determining the 3-dimensional structure of (I) (claimed). The 3-dimensional crystal structure of (I) is useful in medical diagnostics to produce antibodies that permit detection of S. pneumoniae both in vitro and in vivo, and therefore accurate diagnosis of infections caused by the bacterium. The 3-dimensional structure of (I) is also useful in pharmaceutical discovery and development to identify and design compounds that inhibit the biochemical activity of AcpS enzyme in bacteria. Structure/activity studies can be used to optimize the inhibitory activity of compounds to develop antibacterial pharmaceutical compounds for the prevention and treatment of bacterial infections in mammals. The 3-dimensional crystal structures can be used to model AcpS, for solving a crystal structure, and for determining the 3-dimensional structure of AcpS enzymes of unknown structure, and for designing a ligand that binds to the active site domain of (I). The crystals of (I) are also useful as biosensors and other applications. The crystals of (I) can be used in the preparation of acyl carrier protein (ACP) analogs or ACP-derivatives, and the manufacture of catalysis of selected products such as for research, pharmaceutical or industrial applications. The crystals are useful as the fabrication material in the process, manufacture and/or production of a microelectronic device e.g. in the formation of

2-dimensional array on a solid support. The crystals can be used as a fabrication mask and/or template for improvements in silicon nano- and micro-fabrication technology.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De

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☐ 13. Document ID: WO 2003027139 A2

L3: Entry 13 of 13 File: DWPI Apr 3, 2003

DERWENT-ACC-NO: 2003-441048
DERWENT-WEEK: 200341

TITLE: Novel crystallized recombinant polypeptides from Staphylococcus aureus, Streptococcus pneumoniae and Helicobacter pylori and which are involved in membrane biosynthesis, useful as targets for pathogenic bacteria

INVENTOR: ALAM, M Z; AWREY, D ; BEATTIE, B ; CANADIEN, V ; DHARAMSI, A ; DOMAGALA, M ; EDWARDS, A ; HOUSTON, S ; KANAGARAJAH, D ; LI, Q ; MANSOURY, K ; MCDONALD, M ; NECAKOV, S ; NG, I ; PINDER, B ; SHELDRICK, B ; VALLEE, F ; VEDADI, M ; VIOLA, C ; WREZEL, O

PRIORITY-DATA: 2001US-343946P (December 27, 2001), 2001US-324449P (September 24, 2001), 2001US-324504P (September 24, 2001), 2001US-326269P (October 1, 2001), 2001US-326887P (October 3, 2001), 2001US-339560P (October 24, 2001), 2001US-337471P (October 25, 2001), 2001US-340000P (October 26, 2001), 2001US-340002P (October 26, 2001), 2001US-340027P (October 26, 2001), 2001US-341767P (December 18, 2001), 2001US-344307P (December 21, 2001)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
WO 2003027139 A2	April 3, 2003	E	312	C07K014/195

INT-CL (IPC): C07 K 14/195

ABSTRACTED-PUB-NO: WO2003027139A

BASIC-ABSTRACT:

NOVELTY - A crystallized recombinant polypeptide (I) comprising amino acid sequence of polypeptides from Staphylococcus aureus, Streptococcus pneumoniae, Helicobacter pylori and Pseudomonas aeruginosa and which are involved in membrane biosynthesis, or amino acid sequences having at least 90 % identity with the polypeptide sequence, where the polypeptide is in crystal form, is new.

DETAILED DESCRIPTION - A crystallized recombinant polypeptide (I) comprises the amino acid sequence of polypeptides (P) involved in membrane biosynthesis, which includes FtsZ cell division protein (FtsZ), (3R)-hydroxymyristol acyl carrier protein dehydratase (FabZ), acyl carrier protein synthase (AcpS), (3-oxoacyl-(acyl-carrier-protein) synthase III (FabH), teichoic acid biosynthesis protein D (TagD), and Spo0B-associated GTP-binding protein (Obg) from S. aureus 3-ketoacyl-acyl-carrier protein reductase (FabG), UDP-N-acetylmuramoylala- nine-D-glutamate ligase (MurD) and L-alanine adding enzyme (UDP-N-acetyl-muramate:alanine ligase) (MurC) from H. pylori, acyl carrier protein synthase (AcpS) from S. pneumoniae, 3-oxoacyl-(acyl-carrier-protein)reductase (FabG) from P. aeruginosa. (I) comprises an amino acid sequence having at least 90 or 95 % identity with the amino acid sequence of

(P), or comprises an amino acid sequence encoded by a polynucleotide that hybridize under stringent conditions to the complementary strand of a polynucleotide having a sequence encoding any of (P). (I) is in a crystal form.

INDEPENDENT CLAIMS are also included for:

(1) a sample (II) comprising (P), labeled with a heavy atom, or enriched in nuclear magnetic resonance (NMR) isotope;

(2) a crystallized complex comprising the recombinant polypeptides as above and a co-factor or a small organic molecule, where the complex is in a crystal form;

(3) a host cell comprising a nucleic acid encoding (P), where the culture of the host cell produces 1 mg of the polypeptide/l of culture and the polypeptide is at least one-third soluble as measured by gel electrophoresis;

(4) a composition (C) comprising an isolated, recombinant polypeptide, FabG, AcpS, MurD, MurC, TagD or AcpS as above, its 95 % identical sequence or an amino acid sequence encoded by a polynucleotide that hybridizes under stringent conditions to the complementary strand of polynucleotide encoding any of the above polypeptide, where the polypeptide is at least 90 % pure in a sample of the composition;

(5) a composition (III) same as (C), but comprising only FtsZ, FabZ, Obg, FabG or FabH polypeptide;

(6) a complex comprising a polypeptide of (III) and FTSA cell division protein;

(7) a complex comprising polypeptide of (IV) one or more of 50S ribosomal protein (RP) L22, 30S RP S7, 30S RP S5, 50S RP L5, 50S RP L5, 50S RP L6, 50S RP L4, 30S RP S4, 50S RPL3, 50S RP L2, 30S RP S2, RNA polymerase alpha , RNA polymerase beta and beta ';

(8) a complex comprising FabH and leukotoxin LukM and 16 kDa unidentified protein;

(9) a complex comprising FabH and 50S RP L16 and leukotoxin LukM;

(10) a complex comprising FabG and a 25 kDa unidentified protein;

(11) an isolated, recombinant polypeptide comprising at least 90 % identity with FtsZ polypeptide, or an amino acid sequence encoded by a polynucleotide that hybridizes under stringent conditions to the complementary strand of polynucleotide encoding FtsZ, where the polypeptide includes Asp at position 155 and/or 354;

(12) an isolated, recombinant polypeptide comprising at least 90 % identity with FabZ polypeptide from S. aureus, or an amino acid sequence encoded by a polynucleotide that hybridizes under stringent conditions to the complementary strand of polynucleotide encoding FabZ, where the polypeptide includes Leu at position 15 and Asn at position 113;

(13) an isolated recombinant polypeptide, comprising at least 90 % identity with FabG from H. pylori or an amino acid sequence encoded by a polynucleotide that hybridizes under stringent conditions to the complementary strand of a polynucleotide having a sequence encoding FabG, where the polypeptide includes Cys at position 55;

(14) an isolated, recombinant polypeptide comprising at least 90 % identity with AcpS, where the polypeptide includes one or more of the amino acid residues at the specified position of the polypeptide: Lys at position 11;

(15) an isolated, recombinant polypeptide, comprising at least 90 % identity with

MurD or an amino acid sequence encoded by a polynucleotide that hybridizes under stringent conditions to the complementary strand of polynucleotide encoding MurD, where the polypeptide includes Ala at position 16;

(16) an isolated, recombinant polypeptide comprising at least 90 % identity with MurC polypeptide, or an amino acid sequence encoded by a polynucleotide that hybridizes under stringent conditions to the complementary strand of polynucleotide encoding MurC, where the polypeptide includes Thr at position 385, Ile at position 427 and Lys at position 429;

(17) an isolated, recombinant polypeptide comprising at least 95 % identity with Obg polypeptide, or an amino acid sequence encoded by a polynucleotide that hybridizes under stringent conditions to the complementary strand of polynucleotide encoding Obg, where the polypeptide includes Phe at position 339; and

(18) an isolated, recombinant polypeptide comprising at least 90 % identity with FabG polypeptide, or an amino acid sequence encoded by a polynucleotide that hybridizes under stringent conditions to the complementary strand of polynucleotide encoding FabG, where the polypeptide includes Ala at position 58.

ACTIVITY - Antibacterial.

No biological data is given.

MECHANISM OF ACTION - Vaccine.

USE - (I) is useful for designing a modulator for the prevention or treatment of S. aureus, H. pylori, S. pneumoniae, and P. aeruginosa-related disease or disorder. (I) is also useful for identifying small molecules that bind to a recombinant polypeptide. (All claimed.) The structural and functional information of (I) aid in the discovery and design of therapeutic and diagnostic molecules. The crystal structure is useful to make a structural or computer model of the polypeptide, complex or its portion. (I) is also useful for determining crystal structure of a homolog of (P). A protein complex comprising (P) is useful for identifying modulators of the protein complex. Detecting the presence of (P) is useful for diagnosing a patient suffering from a disease or disorder of a pathogenic species. The diagnostic assays are useful for monitoring the effectiveness of an anti-pathogenic treatment in an individual suffering from a disease or disorder of such pathogen. (I) and the recombinant polypeptides are useful for inducing an immunological response in an individual and as an antigen for vaccination of a host to produce specific antibodies which protect against invasion of bacteria, for example by blocking adherence of bacteria to damaged tissue.

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